REMARKS

The subject claims have been amended as indicated to particularly point out the subject invention. No new matter has been added.

35 U.S.C. § 102

Claims 1-20 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Bombeshko et al. (SU 1366744). This rejection is respectfully traversed for the following reasons. The invention as claimed is to a belt construction in which a reinforcement cord follows along a tensile cord, the tensile cord having a loop portion of larger radius of curvature extending down into a tooth and an overlay portion of smaller radius of curvature passing over in contacting relationship with the tensile cord. The Bombeshko reference does not, contrary to the Examiner's statement, show a reinforcement cord having changing radius and long its spiral length. Instead, Bombeshko et al. teaches a spiral wire 5 having a constant pitch an radius equal to the pitch of the teeth. Moreover, in teaching the spiral 5 to be of wire composition, the Bombeshko et al. structure 5 cannot readily assume a smaller radius and steeper pitch as it passes over a tensile cord. The Bombeshko et al. reference is, accordingly, insufficient in teaching a reinforcement cord pursuant to independent claims 1, 10, 16 and the claims dependent therefrom.

Moreover, specifically claimed is an overlay and loop portion having a pitch and radius that changes along a spiral length. No teaching in Bombeshko et al. can be deemed to instruct one skilled in the art as to such a structure. In addition claim 6 specifies the reinforcement cord as being composed of non-metallic material whereas Bombeshko et al. teaches a wire, and hence relatively inflexible, strand 5. The teachings of Bombeshko et al. accordingly are to a wire strand 5 having a pitch equal to that of the teeth and a constant radius in contrast with the claimed invention that teaches a reinforcement cord having a variable pitch and radius along a spiral length. Bombeshko, in limiting the wire strand 5 to

an equal pitch and constant radius, cannot achieve the degree of reinforcement that the present invention cable creates. As the spacing of teeth widens, the dependent loop in Bombeshko will extend into a tooth to a lesser degree. As a result, there will be less reinforcement provided to the lower extremity of that tooth. The metallic composition of the Bombeshko wire 5 will likewise make the formation of a constant radius loop in a belt having a higher tooth density problematic. No support is present, furthermore, in the reference that would instruct one skilled in the art to modify the Bombeshko et al. structure 5 to meet the claim limitations. Indeed, the metallic composition of the wire 5 in the reference coupled with the specific teaching of a constant pitch and constant radius along the wire 5 suggests that a modification or reconstruction to the wire 5 is neither taught nor suggested.

Once Bombeshko sets the spring pitch equal to the belt tooth pitch, and in the absence of any other detail suggesting that the spring deviates from that pitch, the reference has described a helix of constant radius and of constant pitch (equal to the belt tooth pitch). This is further supported by Bombeshko Fig 1, 2.3, 4 & 5. The projection in the transverse plane of a spring, which is a helix, is a sinusoid with an amplitude equal to the helix diameter, and equal projections in height and width above and below the centerline. The wire shown in transverse views Fig 1 and 2 of Bombeshko are sinusoidal in appearance. Such a shape is of little utility in modern toothed belts because the thickness of the tooth is almost always thicker than the toothspace or land area, and the tooth and toothspace profiles are not sinusoidal. A sinusoid capable of passing over the flat portion of the land area , and having a pitch equal to the teeth, would be limited to amplitudes that would not extend down into the tooth unless the upper portion of the sinusoid extended well above, and out of contact with the tensile cord. Lack of contact between the sinusoid and the tensile cord would be functionally deficient in providing a reinforcement of the tooth by connection of the tooth to a tensile cord.

Fig 3 in Bombeshko is a perspective view of the spring. The overlapping loops are clearly due to the angle of the perspective view. This view cannot suggest variation in pitch without also suggesting that the spring has closed loops which are contrary to the other views and description.

Fig 4 & 5 are views perpendicular to the tensile cord and show a series of overlapping circles representing the axial view of the spring. This again shows Bombeshko's intent that the spring be of circular cross section, that is, it has constant radius whether the top of the circle is below (Fig 4) or above (Fig 5) the tensile cord. These views also slow that the extent of each circle in the lateral direction is much wider that the spacing of the cord. Each circle seems to project about 3 times the spacing of the cords. The reinforcing cords of the present claimed invention extend transversely only by the diameter of the tensile cord plus the diameters of the cord in the downward extending portion of the larger loop. This is less than the spacing of the cords on either side of the tensile cord being followed, so that the reinforcement cord does not spread laterally as shown in Bombeshko's Fig 4 and 5. This can only be achieved by a reinforcement cord that provides a variable radius as set forth in the claims.

Fig 6 of Bombeshko is a top or bottom view of the belt showing five instances of the tensile cord (4), and what appears to be 3 pitches of the belt teeth. It also shows the projection of at least portions of springs 6. The sinsusoid amplitude of the springs is about 3 cord spaces, which agrees with the circles of Fig 4 and 5. The spring wire is shown to pass over and under the tensile cords, but the portions of one spring that pass over the tensile cords do not pass over the same cord. This is in direct contradiction to the subject claims. In particular, this is different than claim 1 (and claims dependent therefrom), wherein the reinfocement cord follows one tensile cord. It is different from claim 4 (and claims dependent therefrom) wherein the reinforcement zig-zags along one tensile cord. It is

different from claim 7 (and claims dependent therefrom) wherein the reinforcement cord follows more than one cord, because the same group of cords is always followed.

As Bombeshko et al. fails to anticipate the invention as recited in claims 1-20, it is respectfully requested that this rejection be withdrawn.

Claims 1-20 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Nikonchuk et al. (SU 1820089). This rejection is respectfully traversed for the following reasons. Applicant disagrees that Nikonchuk et al. teaches a reinforcement cord as claimed, namely one following along a tensile cord and having an overlay portion passing over a tensile cord and a loop portion extending downward. The Nikonchuk et al. reference teaches the use of a discrete separate loop element 5 that is coupled through a pin 6 to a tensile cord 2. A reinforcement cord is not even present in the Nikonchuk et al. belt. The loop element 5 does not constitute an overlay portion of a reinforcement cord. Nor is there anything in the Nikonchuk et al. reference that would teach or suggest a reinforcement cord having overlay and loop portions of differing radii and pitch along a spiral length. The elements 5 in Nikonchuk et al. are of constant radius and are not part of a cord that has other portions of different radius and pitch along a spiral length. The discrete elements 5 of the Nikonchuk et al. belt, accordingly, do not meet the claimed limitations of claims 1-20. Nor is there any teaching or suggestion that would instruct one of skill in the art to make modifications and changes necessary to meet the claimed invention. The Nikonchuk et al. belt is therefore insufficient in teaching or suggesting the claimed reinforcement cord having changing radius and pitch along a spiral length.

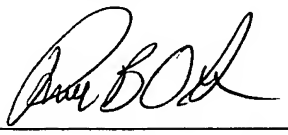
Nikonchuk uses discrete spring elements 5, with a separate spring laid in each tooth 4. The spring elements are not shown anywhere in the land or toothspace portion of the belt, so they cannot follow along the tensile cord as set forth in the pending claim language describing the reinforcement cord.

Nikonchuk's Fig. 2 shows that the discrete springs pass between the tensile cords 2, but they do not pass over the top of the tensile cord. Only the deadman pin 6 comes in contact with the top of the tensile cord. The Nikonchuk construction is pointless without the deadman pin and is clearly different than the subject invention reinforcement cord which not only passes over the cord, but does so in the land or toothspace area.

As Nikonchuk et al. fails to anticipate the invention as recited in claims 1-20, it is respectfully requested that this rejection be withdrawn.

In light of this amendment, all of the claims now pending in the subject patent application are allowable. Thus, the Examiner is respectfully requested to allow all pending claims.

Respectfully submitted,



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